

REMARKS

[0003] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 37-41 and 72-82 are presently pending. Claims amended herein are 37, 72 and 78. Claims withdrawn or cancelled herein are 1-36 and 42-71. New claims added herein are none.

Statement of Substance of Interview

[0004] The Examiner graciously talked with me—the undersigned representative for the Applicant—on December 13, 2007. Applicant greatly appreciates the Examiner's willingness to talk. Such willingness is invaluable to both of us in our common goal of an expedited prosecution of this patent application.

[0005] During the interview, I discussed how the claims differed from the cited art, namely Warthen and Bowman. Without conceding the propriety of the rejections and in the interest of expediting prosecution, I also proposed several possible clarifying amendments.

[0006] Applicant reviewed all of the independent claims with the Examiner and understood him to agree that they would be patentable over the cited art if amended as discussed during the interview. The Examiner stated that he would most likely have to do another search in light of the claim amendments. Applicant herein amends the claims in the manner discussed during the interview. Accordingly, Applicant submits that the pending claims are allowable over the cited art of record for at least the reasons discussed during the interview.

Formal Request for an Interview

[0007] If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0008] Please contact me or my assistant to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for us, I welcome your call to either of us as well. Our contact information may be found on the last page of this response.

Claim Amendments and Additions

[0009] Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 37, 72 and 78 herein.

Formal Matters

[0010] This section addresses any formal matters (e.g., objections) raised by the Examiner.

Drawings

[0011] The Examiner objects to Fig. 8 and 9 for improper shading. Herewith, Applicant submits replacement drawings to correct the informalities noted by the Examiner. In the telephone interview, the Examiner requested that illustrative characters within figures 8 and 9 be converted to the English language. Applicant knows of no rule or statute that requires this. Even if such a rule were to exist, it would not be applicable in this situation.

Claims

[0012] The Office states (Action, p. 3) that dependent claims 38-41 are objected to because the examiner wants to change "A method" to "The method" in a dependent claim.

[0013] In the telephone conference, I explained why I saw no informality that needed correction. All of these claims are dependent. Applicant submits that the subject of each dependent claim is a separate claimed invention. Although a dependent claim refers back to a base claim to provide a base definition of the subject, the subject itself is fresh and new.

[0014] For example, if the reader assumes that a hypothetical independent claim 1 defines a subject Z in the preamble, then a claim dependent therefrom may begin in following proper formats:

- 2. A Z as recited in claim 1, wherein...
- 3. A Z in accordance with claim 1, wherein...
- 4. The Z of claim 1, wherein...

Language such as "as recited in claim 1" or "in accordance with claim 1" defines subject Z (of the dependent claims) in a manner that is clear and definite. Applicant submits that use of "the" instead of "a" does not make the claims more clear or more definite.

[0015] The following persuasive references are provided to support Applicant's position. Specifically, they are (1) examples of patents using the same or similar wording; (2) a quote from well-known and highly respected treatise on claim drafting; and (3) a quote from the MPEP (which specifically refers to multiple dependent claims, but the fundamental basis is the same for singular dependent claims):

(1) Examples of issued patents using the same or similar wording for dependent claims: 5764526; 5734652; 5721781; 5600368; 5551024; 5512921; 5387976; 5974483; 5933838; and 6,006,330.

(2) Faber, Practising Law Institute (PLI), *Landis on Mechanics of Patent Claim Drafting*, Fourth Edition, §11 (1997) (pp. II-15 in Faber, Rel. #2, 12/98) (emphasis added) on dependent claims states the following:

This is the single dependent claim with which practitioners are most familiar. Examples include:

The shaker of claim 1, wherein...

The shaker according to claim 1, wherein...

A shaker as claimed in claim 1, wherein...

The shaker as in claim 1, in which...

The words used to establish claim dependency in the preamble of the claim are a matter of choice, so long as the dependency of the claim is clearly set forth.

(3) MPEP 608.01(n) "Dependent Claims" (emphasis added) states the following:

A. Acceptable Multiple Dependent Claim Wording

Claim 5. *A gadget according to claims 3 or 4, further comprising ---*

Claim 5. A gadget as in any one of the preceding claims, in which ---

Claim 3. A gadget as in either claim 1 or claim 2, further comprising ---

Claim 4. *A gadget as in claim 2 or 3, further comprising ---*

Claim 16. *A gadget as in claims 1, 7, 12, or 15, further comprising ---*

[0016] Accordingly, as per the dependent claims in question here, Applicant respectfully requests that the objections be withdrawn. If these objections are maintained, Applicant requests further clarification as to why these claims are considered unclear and indefinite.

SUBSTANTIVE MATTERS

Claim Rejections under §103

[0017] Claims 37-41 and 72-82 are rejected under 35 U.S.C. § 103. In light of the amendments presented herein and the decisions/agreements reached during the above-discussed Examiner interview, Applicant submits that these rejections are moot. Accordingly, Applicant asks the Examiner to withdraw these rejections and that the case be passed along to issuance.

[0018] The Examiner's rejections are based upon the following references in combination:

- **Warthen:** *Warthen, et al.*, US Patent No. 6,584,464 (issued June 24, 2003);
- **Bowman:** *Bowman, et al.*, US Patent No. 6,006,225 (issued December 21, 1999);
- **Fung:** *Fung, et al.*, US Patent No. 6,687,689 (issued February 3, 2004).

Overview of the Application

[0019] The Application describes a technology for a search engine architecture designed to handle a full range of user queries, from complex sentence-based queries to simple keyword searches and includes a natural language parser that parses a user query and extracts syntactic and semantic information. The parser is robust in the sense that it not only returns fully-parsed results (e.g., a parse tree), but is also capable of returning partially-

parsed fragments in those cases where more accurate or descriptive information in the user query is unavailable. A question matcher is employed to match the fully-parsed output and the partially-parsed fragments to a set of frequently asked questions (FAQs) stored in a database. The question matcher then correlates the questions with a group of possible answers arranged in standard templates that represent possible solutions to the user query. The search engine architecture also has a keyword searcher to locate other possible answers by searching on any keywords returned from the parser. The answers returned from the question matcher and the keyword searcher are presented to the user for confirmation as to which answer best represents the user's intentions when entering the initial search query. The search engine architecture logs the queries, the answers returned to the user, and the user's confirmation feedback in a log database. The search engine has a log analyzer to evaluate the log database to glean information that improves performance of the search engine over time by training the parser and the question matcher (*Application, Abstract*).

Cited References

[0020] The Examiner cites Warthen as the primary reference in the anticipation and obviousness-based rejections. The Examiner cites Bowman and Fung as the secondary references in the obviousness-based rejections.

Warthen

[0021] Warthen describes a technology for an information server that directs users of the information server to desired sources of information where the desired sources of information are determined, at least in part, based on user input (*Warthen*, Abstract).

Bowman

[0022] Bowman describes a technology for a search engine which suggests related terms to a user to allow the user to refine a search. The related terms are generated using query term correlation data which reflects the frequencies with which specific terms have previously appeared within the same query (*Bowman*, Abstract).

Fung

[0023] Fung describes a technology for a system and associated methods to identify documents relevant to an inputted natural-language user query (*Fung*, Abstract).

Obviousness Rejections

Lack of Prima Facie Case of Obviousness (MPEP § 2142)

[0024] Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a prima facie case have not been met.

Based upon Warthen and Bowman

[0025] The Examiner rejects claims 37-41 under 35 U.S.C. § 103(a) as being unpatentable over Warthen and Bowman. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

[0026] Amended independent claim 37 recites a method comprising [emphasis added]:

receiving a query;

mapping the query from a query space to a question space to identify associated frequently asked questions (FAQ), the mapping comprises:

analyzing a log database to determine a relevance of previously stored frequently asked questions to the query, the analyzing comprises:

iteratively training a search engine using data in the log database, wherein the search engine comprises a query parser and a FAQ matcher;

deriving weighting factors based on the iterative training, wherein the weighting factors are used to determine the relevance;

identifying a confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query; and

ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance;

mapping the associated frequently asked questions from the question space to a template space to identify associated templates;

mapping the templates from the template space to an answer space to identify associated answers; and

returning the answers in response to the query.

[0027] In the rejection to this claim, the Examiner argues that the subject matter of the claim is rendered obvious by Warthen in view of Bowman. Applicant respectfully submits that neither Warthen nor Bowman, alone or in combination, describe all of the features of this claim.

[0028] This Office Action states that Warthen does not explicitly teach analyzing the logs to determine the relevance of previously stored queries to the current query. The Examiner therefore relies on Bowman for this feature. However, as agreed to in the Examiner interview, Bowman does not teach or suggest that the analyzing comprises *"iteratively training a search engine using data in the log database*, wherein the search engine comprises a query parser and a FAQ matcher; *deriving weighting factors based on the iterative training*, wherein the weighting factors are used to determine the relevance; identifying a

confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query".

[0029] Unlike the recitation of claim 37, Bowman discloses that related terms are generated using query term correlation data which reflects the *frequencies* with which specific terms have previously appeared within the same query (Bowman, Abstract). The query term correlation data is regenerated periodically from recent query submissions, such as by using the last M days of entries in a query log, and thus heavily reflects the current tastes of users. As a result, the related terms suggested by the search engine tend to be terms that correspond to the most frequently searched items during the relevant time period. (Bowman, ¶ 4, lines 23-29). Claim 37 does not recite using Bowman's *frequencies*. Instead, it recites using "*iterative training*".

[0030] Based on the discussion above, Warthen in view of Bowman does not render this claim obvious, therefore, the Applicant respectfully requests that the Examiner withdraw the rejections to this claim.

Based upon Warthen and Fung

[0031] The Examiner rejects claims 72-82 under 35 U.S.C. § 103(a) as being unpatentable over Warthen in view of Fung. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

[0032] Amended independent claim 72 recites a method of parsing a search query, comprising [emphasis added]:

segmenting the search query into individual character strings, wherein at least one of the individual character strings comprises a single character;

producing a parse tree from at least one parsable character string of the search query;

generating at least one keyword based at least on one non-parsable character string of the search query ;

determining a relevance of the parse tree and the at least one keyword to a list of frequently asked questions (FAQ), wherein the relevance is determined by a FAQ matcher that has been iteratively trained using data from a log database; and

using the parse tree and the keyword to return answers to the search query.

[0033] In the rejection to this claim, the Examiner argues that the subject matter of the claim is rendered obvious by Warthen in view of Fung. Applicant respectfully disagrees. Applicant respectfully submits that neither Warthen nor Fung, alone or in combination, describe all of the features of this claim.

[0034] For example, the combination of Warthen and Fung does not teach or suggest "*determining a relevance of the parse tree and the at least one keyword to a list of frequently asked questions (FAQ), wherein the relevance is determined by a FAQ matcher that has been iteratively trained using data from a log database*". In particular, as agreed to in the Examiner interview, the combination of Warthen and Fung fails to disclose "*a FAQ matcher that has been iteratively trained using data from a log database*".

[0035] Based on the discussion above, Warthen in view of Fung does not render this claim unpatentable, therefore, the Applicant respectfully requests that the Examiner withdraw the rejections to this claim.

[0036] Amended independent claim 78 recites a parser for a search engine, comprising [emphasis added]:

a segmentation module that segments a search query into one or more individual character strings, wherein at least one of the one or more individual character strings comprises a single character;

a natural language parser module that produces a parse tree from one or more parsable character strings of the search query;

a keyword parser to identify one or more keywords in the search query and to output the keyword,

a log analyzer able to derive, over time, various weights indicating how relevant the parse tree and the one or more keyword are to a list of frequently asked questions, wherein the various weights are determined based on iterative training using data from a log database,

wherein the parse tree and the one or more keywords are used to return answers to the search query.

[0037] In the rejection to this claim, the Examiner argues that the subject matter of the claim is rendered obvious by Warthen in view of Fung. Applicant respectfully disagrees. Applicant respectfully submits that neither Warthen nor Fung, alone or in combination, describe all of the features of this claim.

[0038] For example, the combination of Warthen and Fung does not teach or suggest *"a log analyzer able to derive, over time, various weights indicating how relevant the parse tree and the one or more keyword are to a list of*

frequently asked questions, wherein the various weights are determined based on iterative training using data from a log database". In particular, as agreed to in the Examiner interview, the combination of Warthen and Fung fails to disclose "wherein the various weights are determined based on iterative training using data from a log database".

[0039] Based on the discussion above, Warthen in view of Fung does not render this claim unpatentable, therefore, the Applicant respectfully requests that the Examiner withdraw the rejections to this claim.

Dependent Claims

[0040] In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.

Conclusion

[0041] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call/email me or my assistant at your convenience.

Respectfully Submitted,

Dated: 12-17-2007

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